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**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554**

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FEDERAL COMMUNICATIONS COMMISSION
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In the Matter of)

Inquiry Concerning the Deployment of)
Advanced Telecommunications)
Capability to All Americans in a Reasonable)
and Timely Fashion, and Possible Steps)
to Accelerate Such Deployment)
Pursuant to Section 706 of the)
Telecommunications Act of 1996)

CC Docket 98-146

**COMMENTS OF
SBC COMMUNICATIONS INC.**

SBC COMMUNICATIONS INC.

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SUMMARY*

SBC wholeheartedly supports section 706's public policy goal, and shares the FCC's concern about the deployment of advanced telecommunications capability in rural and low-income areas. However, SBC believes that the regulatory and competitive environments will make achieving the goal of section 706 difficult, especially in light of the Advanced Services Order.

Advanced capability and services are being deployed where expected returns are the greatest -- typically, in major metropolitan areas

For ILECs, the FCC could conceptually encourage such deployment through deregulatory measures such as relief in price caps, pricing, costing, and the tariffing process. However, the unbundling and wholesale discount obligations will continue to severely dampen an ILEC's incentives to deploy such capacity given the mismatch of risk and reward that is created by its competitors' ability to effectively capture the benefits of the deployment at little or no risk.

Further complicating matters are the effect of State treatment of intrastate advanced services and the issues of timing. Without close coordination and a consistent approach between the FCC and the States, any relief provided by one regulatory body could be largely or totally eliminated by the other (*e.g.*, create arbitrage opportunities). Also, the pace of competition and demand for advanced services is rapidly increasing, and any rule or structure that slows down a carrier's ability to make decisions and to respond to the market would be counterproductive and contrary to section 706.

* The abbreviations used in this Summary are as defined in the main text.

SBC offers a number of advanced services aimed at business communities, with ISDN aimed at small businesses and residences. Pacific Bell has also begun offering ADSL service. However, adding advanced capability and services to a network already populated with a number of pre-existing technologies and services is not easy. There are interference issues that must be addressed, and the standards for new technologies are often few, new, and/or not fully adopted. Moreover, an advanced capability may have technical limitations that preclude ubiquitous availability, or it may be uneconomical to deploy in some situations.

The FCC should engage in rulemaking to provide non-dominant treatment of ILEC services that use advanced telecommunications capability.

The dual jurisdiction exercised over advanced services must be closely coordinated between the Commission and its State counterparts and a consistent approach taken in order to maximize the effect of any regulatory encouragement.

As to the Internet and ISPs, the current *Computer III/ONA* structure fully addresses any potential discrimination issues; there is no need to adopt any specific measures under 706 or for ISPs. Absent indications of clearly unreasonable practices or specific complaints, the FCC should not regulate or otherwise intervene in Internet peering arrangements.

Only the LMDS spectrum, the 24 GHz spectrum, and the 39 GHz spectrum are likely to be capable of providing the bandwidth necessary for advanced telecommunications capability and services. The PCS and cellular spectrums are unlikely to support such capability notwithstanding current discussions of third generation technologies.

The FCC should carefully consider the context of the various terms and phrases in the statute, and its intended beneficiaries when interpreting section 706. SBC believes that section 706 was intended to be a continuing obligation of the Commission, with an evolving definition of "advanced telecommunications capability." The Commission should resist any call to specifically list all the capabilities that constitute an advanced telecommunications capability. SBC also provides specific suggestions and comments on various statutory terms.

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SBC Communications Inc., on behalf of itself and its subsidiaries (collectively, "SBC"), files these Comments in response to the Notice of Inquiry, FCC 98-187 ("Notice"), that opened this proceeding.

The questions posed by the Commission clearly demonstrate the seriousness with which it undertakes to fulfill the goal set by Congress in section 706 of the Telecommunications Act of 1996 ("1996 Act"). Particularly noticeable is the FCC's specific concerns about ensuring that "all Americans" truly includes those living in rural and low-income areas. SBC shares that concern, and indeed has been committed for decades to ensuring that those consumers have access to universal service. Unfortunately, SBC believes that the current environment of rapid

change and competition, combined with the Commission's interpretation of section 706,¹ will only make achieving section 706's goal on a reasonable and timely basis much more difficult, if possible at all.

I. THE ENVIRONMENT FACING THE COMMISSION LIMITS ITS ABILITY TO ENCOURAGE THE SOUGHT-AFTER DEPLOYMENT

SBC wholeheartedly supports the public policy goal set in section 706 -- "the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular element and secondary schools and classrooms)." However, SBC anticipates that the goal is much easier said than done, especially given the regulatory tools at the Commission's disposal. At a minimum, a consistent and coordinated effort will be required between the Commission and the States.

Given the pervasive regulation of ILECs -- the only dominant, domestic carriers -- the FCC could conceptually encourage deployment by them through deregulatory measures.

¹ See Memorandum Opinion and Order, and Notice of Proposed Rulemaking, FCC 98-188, *Deployment of Wireline Services Offering Advanced Telecommunications Capability, Petition of Bell Atlantic Corp. for Relief from Barriers to Deployment of Advanced Telecommunications Services, Petition of U S WEST Communications, Inc. for Relief from Barriers to Deployment of Advanced Telecommunications Services, Petition of Ameritech Corp. to Remove Barriers to Investment in Advanced Telecommunications Technology, Petition of the Alliance for Public Technology Requesting Issuance of Notice of Inquiry and Notice of Proposed Rulemaking to Implement Section 706 of the 1996 Telecommunications Act, Petition of the Ass'n for Local Telecommunications Services for a Declaratory Ruling Establishing Conditions Necessary to Promote Deployment of Advanced Telecommunications Capability Under Section 706 of the Telecommunications Act of 1996, Southwestern Bell Telephone Company, Pacific Bell, and Nevada Bell Petition for Relief from Regulation Pursuant to Section 706 of the Telecommunications Act of 1996 and 47 U.S.C. § 160 for ADSL Infrastructure and Service*, CC Docket Nos. 98-147, 98-11, 98-26, 98-32, 98-78, 98-91; CCB/CPD No. 98-15 RM 9244 (rel. August 7, 1998) ("Advanced Services Order").

However, the regulatory treatment and structure used on incumbent LECs does not easily lend itself to providing that encouragement, particularly in light of the FCC's interpretation of section 706. While the FCC should provide regulatory relief in price caps, pricing, costing, and the tariff review process for services using advanced capability, the encouraging effect of any such relief is ~~not necessarily muted~~ by the countervailing effects of the unbundling and wholesale discount obligations.

Those obligations severely dampen ILECs' incentives to develop and deploy advanced services, which by their nature are very capital intensive. The potential upside to the advanced services is largely erased by competitors obtaining the benefit of the deployment risk-free; the potential downside is always absorbed by the ILEC. A reasonable firm is unlikely to risk much if any capital to deploy advanced capabilities to metropolitan areas, much less to underserved or marginally profitable areas if its competitors have the ability to undercut the offering with minimal or no capital investment and much greater regulatory freedom. Thus, for example, an ILEC faced with steep wholesale discounts and low UNE pricing is much less likely to see interstate pricing and tariffing flexibility as offsetting -- especially when competition from other sources also effectively cap the price that can be charged (e.g., cable companies offering cable modem service).

Even assuming the FCC would be willing to provide such relief to encourage deployment -- and in light of the Commission's interpretation that section 706 does not provide any source of

authority,² the ILECs' collective track record for obtaining regulatory flexibility or relief under section 10 or otherwise has not been great -- a State could further diminish or eliminate any such federal encouragement. There are few services today that are purely interstate or intrastate in nature. Absent close coordination and a consistent approach taken by the two regulatory bodies, having pricing flexibility for the interstate version of a service could largely be illusory due to arbitrage made possible by dominant regulation of the intrastate offering. The potential for arbitrage can only be expected to increase since determining the jurisdiction of the traffic of new services likely to be considered to be based upon advanced capability, is technically or practically impossible.³

Compounding those problems is the issue of timing. The telecommunications market, particularly the demand for data services, is growing faster every day. Further, new technologies and innovative applications for old technologies are being introduced continuously. The interplay between the two, especially in the context of increasing competition, are shortening the time available to companies to make market decisions. In recognition, the Commission should review any rule it may promulgate to ensure that the carriers' abilities to make decisions are not slowed, that as much uncertainty as possible is eliminated, and that micromanagement of any

² Advanced Services Order, ¶ 77 ("section 706(a) does not constitute an independent grant of forbearance authority or of authority to employ other regulating methods. Rather, we conclude that section 706(a) directs the Commission to use the authority granted in other provisions, including the forbearance authority under section 10(a), to encourage the deployment of advanced services.").

³ "Direct Case of Pacific Bell" filed September 11, 1998, *Pacific Bell Telephone Company, Pacific Bell Tariff FCC No. 128, Pacific Bell Transmittal No. 1986*, CC Docket No. 98-103; "Direct Case of GTE" filed September 8, 1998, *GTE Telephone Operating Companies, GTOC Tariff FCC No. 1, GTOC Transmittal No. 1148*, CC Docket No. 98-79

carrier or categories, or second-guessing of their decisions, is also eliminated. Regulatory and legal processes are not generally not known for quickness; in today's telecommunications environment, the quicker the guidelines are in place and the less they involve "real-time" involvement in a carrier's activities (e.g., deployment plan approval), the better.

SBC does not mean to leave the Commission with the impression that nothing can be done to help achieve the Congressional goal established in section 706; SBC instead seeks only to provide a brief overview of the constraints faced by the FCC in light of the competitive and regulatory environments. There are undoubtedly actions that the Commission can take that could prove helpful, and they should be explored and implemented where appropriate. SBC believes, however, that the linkage between any such actions and actual deployment of advanced capability to all Americans will ultimately prove to be fairly loose.

II. CURRENT STATUS OF ADVANCED SERVICES CAPABILITY

SBC offers a number of advanced services that are based upon advanced telecommunications capability (e.g., frame relay, cell relay). Those services have, however, generally been aimed at the large and medium size business communities. For small businesses and residences, SBC has widely deployed ISDN. Recently, Pacific Bell has begun deploying asymmetrical digital service line ("ADSL") capabilities in 87 central offices in California.

Adding advanced telecommunications capabilities to a network already populated with a number of pre-existing technologies and services is not easy, however, and the Commission should not assume otherwise. ADSL is a prime example. ADSL is one of the family of

technologies generically referred to as "xDSL," which encompasses a number of different technologies used to provide high-speed data services. Notwithstanding falling within the category, not all xDSL technologies are necessarily compatible or have similar operational requirements, but rather require different loop conditions in which to operate. Furthermore, different xDSL technologies, as well as other digital service technologies (e.g., T1), create interference under certain circumstances, which preclude their sharing the same or adjacent binder groups or cables. Each xDSL service is unique and must be analyzed for power and spectrum conflicts between themselves and other services on a network. Indeed, because standards are relatively few, new, and/or not fully adopted by manufacturers or carriers, the operating characteristics of the equipment used in providing the same xDSL service can create the opportunity for conflicts that degrade services. For example, SBC has had to develop and implement new operating standards in introducing ADSL into its networks in order to address spectrum and power conflicts between ADSL and existing ISDN and HDSL services. That process is neither easy nor quick, and can result in extreme and costly measures being taken to assure that deployment of new technologies does not disrupt the embedded base of SBC's and its competitors' technologies and services, or otherwise harm or impair the network. At times it is simply not possible to accommodate all desired uses of the network in a particular location.

Moreover, an advanced telecommunications capability may have limitations that preclude ubiquitous availability to all customers. For example, ADSL requires a copper loop no longer than 17.5 Kft (using ANSI standard DMT-based ADSL to provide 384Kbps by 128Kbps, as currently offered by Pacific). Customers served on long loops or loops with too many disturbers

in the same or adjacent binder groups typically will not have ADSL services available to them. Although other DSL technology, such as HDSL or IDSL may be able to reach across longer loops through the use of repeaters, those technologies are not always compatible with the existing uses of the portion of the network in question. Digital loop carriers also foreclose central office-based ADSL service.

Even where an advanced telecommunications capability is available that could technically and operationally be deployed, the expected demand and associated costs may make the deployment uneconomical. This is particularly true in rural markets where the costs of deploying the capability may be greater (e.g., might also require deployment of ATM switch and fiber transport which already exist in metropolitan areas due to other demand), the absolute demand lower, and the cost per-unit proportionately higher. For example, if 20% of the customers want ADSL service, deploying ADSL equipment in a central office serving 10,000 customers will be cheaper than deploying in a central office serving 500 given the economies of scale on ADSL equipment pricing (e.g., per-subscriber cost becomes cheaper the more capacity ADSL equipment has).

And, at the risk of being even more repetitive, incumbent LECs have even less incentive to invest in rural areas when those investment are immediately and fully available to its competitors at little to no risk to them. Whatever non-economic benefit that might otherwise be seen as sufficiently beneficial to make a marginal investment (e.g., community relations) just disappears as competitors are able to claim the investment for themselves. [Indeed, deployment could easily result in more competition for ILECs in the rural areas than otherwise might be

faced by ILECs, and for the best customers, those that want and are willing to pay for advanced services. Perversely then, the unbundling and wholesale discount obligations could create disincentives for ILECs to invest in advanced capability in the very areas where Congress and the FCC have been understandably concerned }

III. THE FCC SHOULD PROVIDE NON-DOMINANT TREATMENT FOR SERVICES BASED UPON ADVANCED TELECOMMUNICATIONS CAPABILITY

In order to encourage ILECs to deploy advanced telecommunications capability, the FCC should provide for non-dominant treatment for interstate services based upon such capability.

Such a change in treatment should be the minimal amount of relief provided to encourage ILECs.

Inasmuch as the Advanced Services Order rejected Pacific's request for section 10 forbearance for its ADSL service, the Commission should engage in rulemaking to modify its rules to relieve ILECs' advanced services from dominant treatment, and provide or permit the following relief.

- Permissive tariff filing authority
- One-day notice periods for modifying tariff
- No requirement of cost support
- No annual tariff filing requirement
- No study area price averaging requirement
- Contract-based pricing
- Volume and term pricing
- Promotional pricing

In addition, advanced services should be removed from price cap regulation, should not require Part 69 rate structure codification, and should not require Section 214 approval prior to the withdrawal of any advanced service.

At end, regulatory treatment of advanced telecommunications capability and advanced service should be competitively neutral, and not depend upon the identity of the provider, or its historical regulatory category.

IV. A COORDINATED EFFORT BETWEEN THE FCC AND STATE COMMISSIONS IS ABSOLUTELY REQUIRED

As noted earlier, the nature of advanced telecommunications capabilities are such that it is often difficult if not impossible to determine the jurisdiction of the traffic. Internet traffic is a prime example. Because data addresses are not geographically assigned like NPA-NXX telephone numbers, it is impossible to tell where traffic on the Internet terminates (or from the terminating perspective, where it geographically originated). Some traffic will terminate within the State of origin, some outside the State, and some outside the country of origin. Accordingly, many advanced services can be expected to have both intrastate and interstate uses and thus be subject to the jurisdiction of both the FCC and State commissions.

This dual jurisdiction has the real danger of subverting any encouragement the FCC may provide, or vice versa. For example, if the FCC seeks to encourage deployment by providing non-dominant treatment for services based upon advanced capabilities, continued regulation at

the State level may effectively eliminate the intended beneficial effects due to, for example, arbitration opportunities.

Fortunately, the direction provided the Commission by section 706 is expressly and equally applicable to the States. However, the States and the FCC must coordinate their actions, and the FCC will likely need to be flexible on its section 706 approach such that interstate variances are possible on a State-by-State basis.

V. ISP ISSUES

A. **The *Computer III*/ONA Structure More than Adequately Addresses ISP or Their Customers' Access to xDSL and Other Advanced Telecommunications Capability Offered by ILECs**

Under *Computer III*, Southwestern Bell Telephone, Pacific Bell, and Nevada Bell must make available to non-affiliated enhanced service providers ("ESPs") the same telecommunications services and functions made available to itself or a competing affiliated ESP. If the enhanced service is offered directly by the ILEC or an affiliate that is not fully *Computer II*-compliant, then the involved ILEC must file and the FCC must approve a Comparably Efficient Interconnection ("CEI") plan specific to that service. Such a plan ensures that ESPs are provided with interconnections to the BOCs' own networks that are substantially equivalent to the interconnections that the BOCs provide for their own enhanced service.⁴

The Commission has tentatively concluded elsewhere, however, that it should eliminate the requirement that BOCs file CEI plans and obtain Bureau approval for those plans prior to

⁴ California v. FCC, 39 F.3d 919, 927 (9th Cir. 1994).

providing new enhanced/information services.⁵ SBC supports this view, and agrees with the FCC's observation that CEI plans were always intended to be an interim measure that would not be necessary to protect against access discrimination once BOC-specific Open Network Architecture ("ONA") plans were approved and implemented.⁶ As the Commission has stated, "ONA provides [information service providers] an even greater level of protection against access discrimination than CEI. Under ONA, not only must the BOCs offer network services to competing ISPs in compliance with the nine CEI 'equal access' parameters, but the BOCs must also unbundle and tariff key network service elements beyond those they use to provide their own enhanced services offerings."⁷ In concrete terms, among other things, ESPs/ISPs may obtain access to a wide range of various unbundled ONA services, termed Basic Service Elements ("BSEs"), through access links described as Basic Service Arrangements ("BSAs"), through which they may configure their enhanced/information services. Other ONA elements include Complementary Network Services ("CNSs") that an end user may obtain from carriers so as to obtain access to or receive information services, and Ancillary Network Services ("ANSs") that may be useful.⁸

⁵ *Computer III Further Remanding Proceedings: Bell Operating Company Provision of Enhanced Services*. CC Docket Nos. 95-20 and 98-10, Further Notice of Proposed Rulemaking, FCC 98-8, released January 30, 1998 ("Computer III Further Remand FNPRM"), para. 61.

⁶ Id.

⁷ Id. (emphasis added).

⁸ Id., at ¶ 80.

Combined with the fact that ISPs are similar to other business customers in that the same types of circuits and services are to connect to ILECs (e.g., LFB, PRI), this structure fully addresses any potential for discrimination concerns, and there is nothing in specific to section 706 or to Internet service providers ("ISPs") that warrants any changes to what has been and is working.

B. The FCC Should Not Yet Intervene in Peering Arrangements, But Should Continue to Monitor Activity and Practices

Absent any indication of clearly unreasonable practices or specific complaints, the Commission should risk erring on the side of staying in but 15 years, the industry has gone through numerous significant changes in the way domestic traffic is carried (single backbone, multiple backbone, limited public peering, expanded public peering, private peering, etc.). Imposing regulation here might impose structural impediments to the natural evolution and growth process which has made the Internet so successful.

As to private or proprietary peering, there has been a quick shift to private peering over the last couple of years to deal with the congestion at public peering places. Although these peering relationships are not available publicly, economic realities still seem to be driving the relationships and, insofar as SBC is aware, discriminatory activity is not evident. Carriers that cannot bring an equivalent amount of traffic to the table have to pay. This general approach has resulted in rationale responses, such as smaller carriers are starting to build their own relationships to combine traffic so that they can peer with the Tier 1 carriers.

VI. MORE SPECTRUM WILL BE NEEDED BEFORE WIRELESS BROADBAND CAPABILITY BECOMES A CONSUMER OFFERING

From a wireless perspective, only the LMDS spectrum, 24 GHz spectrum, and the 39 GHz spectrum are likely capable of providing high bandwidth for advanced telecommunication capability and services. However, due to economics, the use of this spectrum will initially be aimed at the large, medium, and perhaps small business markets; it will not be a good medium for the residential market with the possible exception of multiple dwelling units.

While there is much discussion about the evolution of third generation capabilities using the "personal communications service" PCS and cellular spectrums, it is not likely that either spectrum will provide the broadband capabilities section 706 speaks about. The PCS and cellular spectrum does not today fulfill the broadband concept in terms of speed, and the speed component of that definition will only be increasing.

If the FCC is interested in enabling wireless broadband capabilities on the consumer market in general, large amounts of spectrum will need to be made available, similar to what was made available in LMDS, at lower frequencies (e.g., 2-5GHz range). This spectrum would need to be limited to fixed and limited mobility services if broadband capability is sought and high penetration rates are anticipated. Moreover, there should be no arbitrary or artificial restrictions on who can be a licensee for any such spectrum. The evolving economics of broadband wireless equipment and transmission characteristics of the lower frequency mentioned above may make wireless a viable alternative to provide section 706 type services to the consumer market in urban and rural areas, and provide a possible alternative to copper, fiber and coax.

VII. COMMENTS ON STATUTORY TERMS

In interpreting the various terms and phrases contained in section 706, the FCC must take into account the intended beneficiaries of the capability (i.e., "all Americans"), and the current state of deployment of communications capabilities. Defining "broadband" to, for example, only include those technologies that support DS-3 or higher transmission rates would ignore the fact that "all Americans" have not demonstrated any need to use such capability, as well as the "capability gap" that would be created by the definition (e.g., encourage DS-3 capabilities, but not ADSL even though relatively few have access to or purchase ADSL today).

Moreover, as with the evolving definition of "universal service," the periodic review process required by section 706(b) clearly indicates that Congress intended that the definition of "advanced telecommunications capability" would also evolve over time. Note particularly that subsequent 706 reviews are not dependent upon an FCC finding that the statutory objective was not being met in the preceding review. Instead, Congress clearly provided the FCC with the continuing obligation and flexibility to determine, at the time of the review, what *then* constitutes "advanced telecommunications capability." To do otherwise could eventually make section 706 a dead letter as deployment of the advanced capability that met the first definition was completed.

Also, the Commission should resist any calls to list all the capabilities that constitute an "advanced telecommunications capability." Similar suggestions have been rejected in other proceedings, and should be rejected here as well.

A. "Advanced Telecommunications Capability"

Congress has already defined "advanced telecommunications capability" as set forth in the statute. It is the sum of the component parts of that definition which will flesh it out. That said, it is probably not reasonable to define "advanced telecommunications capability" just in terms of speeds or features. The industry has a wide range of advanced technologies available to construct systems and services. Ultimately, what may be considered "advanced" to a residential consumer, could easily be considered inadequate for a business customer. Likewise, the needs and requirements of a large, institutional or commercial customer may indeed require all the latest technology the industry can muster. However, in the context of the consumer marketplace, "advanced telecommunications capability" clearly refers to high-speed two-way data-centric services such as cable modems or xDSL.

B. "Advanced Telecommunications Capability" versus "Advanced Telecommunications Service"

An "advanced telecommunications capability" is either an advanced technology in whatever form (*e.g.*, hardware, software) or the result of networking advanced technologies together. The advanced capability provides no benefit in and of itself; it simply exists.

In contrast, an advanced service needs at least one advanced telecommunication capability in order to provide a service to an user/subscriber. For example, deploying ADSL equipment only creates an advanced capability. When the equipment is actually used to provide a high bandwidth connection for the subscriber/end user is an advanced service being provided.

C. "Broadband"

SBC believes that the definition of broadband must take into account differing digital and analog measurements. Based upon common usage in the industry, SBC suggests that for a digital signal, broadband means a transport element that operates at 128 kb/s or greater; for analog, a transport element that operates at 4 kHz or greater.

D. "Originate and Receive"

SBC believes that the phrase "originate and receive," read in context, should be interpreted to mean "originate or receive." The Commission has reached that same conclusion with respect to other provisions of the 1996 Act,⁹ and the same reading is warranted here. Congress has set an express objective of encouraging advanced capabilities; to exclude those that are one-way technologies would be unduly limiting, especially if such a technology were the most efficient, least priced means of providing a broadband, high-speed telecommunications service desired by a consumer.

Moreover, all communication, when broken down to its constituent parts, is one-way. One party originates and the other party receives. While roles often reverse over short periods of time during a single communication episode, excluding those instances where they do not would be arbitrary.

Similarly, on the issue of whether the concept of "real-time" communications is encompassed by the definition of "advanced telecommunications capability," SBC notes that

⁹ See *First Report and Order, Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, 11 FCC Rcd 15499, ¶ 184 & n.368 (1996) ("telephone exchange service and exchange access" read as one, the other, or both).

every transmission has some amount of delay. The capabilities that the Commission refers to as "real-time" are actually cases where the delay is simply within the acceptable time frame of human perception. To deny the advanced nature of a capability solely on the basis of the amount of delay is arbitrary in that it ignores the level of sophistication and complexity of the technology which enables it. Time, *i.e.*, delay should not be a factor in determining whether a capability is advanced.

E. Video Telecommunications

The term "video telecommunications" is clearly used by the industry to indicate video conferencing (*i.e.*, two-way phone call using video as well as voice). Video conferencing standards are designed to work over analog modems up to PRI lines and beyond.

Respectfully submitted,

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